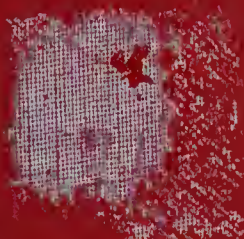


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THE UNIVERSITY OF ALBERTA

STRUCTURE FORMATION IN SMALL GROUPS

BY



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A THESIS

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Structure Formation In Small Groups" submitted by A. G. Isbister in partial fulfillment of the requirements for the degree of Master of Education.

ABSTRACT

The investigation of group structuration and leadership formation, as a function of the group interaction, was the focus of the present study. Ancillary purposes were: to investigate the effects of a cognitive condition as opposed to the effects of an affective condition; to undertake a dynamic analysis of the structuration, based upon reward-cost concepts; to study the factor of the legitimacy, or acceptance, of task activity in the formation of single and multiple leadership.

The sample was drawn randomly from fourth-year, educational psychology students. All members volunteered their time to the project. Twenty groups, each having four individuals, were formed and were arbitrarily split into two sections of ten. The groups were homogeneous on the basis of sex.

Ten of the groups were randomly assigned to the Cognitive Condition, in which each group was presented with the cognitive task to resolve in one thirty-minute session. The other ten groups were exposed to the Affective Condition, in which each group was required to resolve an affective task in a session of thirty minutes. During each group session an observer, the researcher, utilized Bales Interaction Process Analysis to record the group interaction. Upon termination of the session the groups

completed a Post-Session Questionnaire which dealt with sociometric choice.

A factor analysis was carried out on the first eleven items of the Post-Session Questionnaire, while the remaining three items were used as an internal check of validity. The sociometric structure, based on the questionnaire, was related to the structure of the actual interaction, the latter a product of Bales IPA. Finally a dynamic analysis was carried out whereby the interaction of each group session was studied as a series of five segments, the objective being to delineate the formation of attraction by using reward-cost effects of the interaction.

The results were supportive of the primary purposes of the investigation, but the hypotheses were neither wholly supported nor refuted. It was found that the task interaction and social-emotional interaction are equally important in the structuration, although this will vary according to the particular conditions operating. It was also proven that the cognitive and affective treatments produced differential effects in the process of structuration. The reward-cost model provided a consistent explanation for the leadership formation and structuration. Lastly, the factor of task legitimacy had a demonstrable effect on single and multiple leadership.

ACKNOWLEDGEMENTS

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CHAPTER I

INTRODUCTION TO THE PROBLEM

The tendency is to view the structure of a group as a static phenomenon, whereas in reality it is dynamic. Structure evolves as group interaction takes place, so that at a particular point in time one can delineate a particular structure (Flament & Apfelbaum, 1966; Hare, 1962, p. 10). Newly formed groups are essentially structureless or have a rather tenuous structure at best, but with the establishment of ongoing interaction certain patterns of communication are formed between the members. Many works (Hare, 1962; McGrath & Altman, 1966) have dealt with the subject of structure generally, but on the whole little attempt has been made to analyze it as a dynamic concept.

Interaction and structuration are intimately related. As Bales (1950) stated, "Although the social structure of the group and its culture both arise out of the interaction and are formed by it, once formed, they constitute a part of the framework within which further interaction proceeds (p. 66)." Along this vein, Gibb stated, ".....generally groups reveal structure in interaction (1954)." The crucial point is that since interaction forms the basis for the development of structure, the process is necessarily a dynamic one because interaction itself is dynamic. However, this is not to suggest that group member relationships are

in a continual state of flux, since definite systems of relating do emerge as a function of the experiences in the interaction.

A further area requiring more investigation is that of identifying and tracing factors in the interaction which account for the evolvement of structure. Toward this end the concepts of reward and cost were introduced into this study. The researcher assumed that the actual underlying determinants of structuration are the rewards and costs occurring in the interaction between members (Thibaut & Kelley, 1959; Homans, 1961).

The present investigation was designed to study the role of interaction in structuration, under two conditions: a cognitive condition and an affective condition. The ongoing interaction and its patterns were systematically analyzed through the use of the Bales Interaction Process Analysis (1950), and relating the information to the overall sociometric structure at the end of a session.

Twenty groups of four persons were asked to interact for a single session of 30 minutes, the session itself being studied as five separate time segments. This allowed a dynamic analysis of changing and crystallizing interactive patterns that were unfolding between members.

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The purpose of this investigation can be outlined more specifically as follows:

1. To study small-group communication in order to identify the functioning of task and social-emotional interaction as determinants of group structuration.
2. To investigate the effects of a cognitive and an affective condition on group interaction and structuration.
3. To present a dynamic picture of the development of structure and leadership, this involving the concepts of reward and cost as key variables of the interaction.
4. To apply the concept of "legitimacy of task activity" as a factor in the formation of single and multiple leadership (Burke, 1967).

The essential purpose of this paper was to clarify the specific conditions under which task-oriented and social-emotional interaction enter into the formation of group structure. The usefulness of this endeavour lies in the application of the findings to many aspects of group functioning. Among these aspects are group cohesiveness, the development of channels of communication, member satisfaction, and acceptance of a task by group members.

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CHAPTER II

RELEVANT LITERATURE AND THEORETICAL FOUNDATIONS

This chapter will present an examination of some of the relevant knowledge pertaining to group interaction and resultant structuration. It will also deal with the particular conditions within which group interaction occurs, namely the potential influence of a cognitive condition and an affective condition. Another factor, that of "legitimacy of task activity", will be examined in an attempt to account for the phenomena of single and multiple leadership, a facet of structure. Finally, a theoretical rationale will be presented, embracing the concepts of reward and cost, so as to clarify the effects of interaction between individual members.

The key terms and concepts are explained throughout the paper and also in the section dealing with definitions. However, to prevent confusion certain terms should be clarified at the outset. Two such terms are "social-emotional interaction", and "task interaction", which apply to the interaction per se and not to the conditions or experimental treatments within which the groups are operating. The terms "cognitive" and "affective" are primarily utilized to refer to the aforementioned experimental treatments. For further clarification the reader is referred to the section dealing with definitions (Chapter III).

THE HISTORY OF THE UNITED STATES

The history of the United States is a story of growth and change. It begins with the first settlers, who came to the Americas in search of a new life. They found a land of opportunity, but also a land of challenge. The early years were marked by conflict and struggle, as the settlers fought to establish their own communities. Over time, the United States grew from a small colony into a powerful nation. It was a process of constant evolution, shaped by the dreams and aspirations of its people. The story of the United States is a testament to the power of the human spirit and the ability of a nation to overcome adversity. It is a story of hope and progress, of a land that has always been a beacon of freedom and democracy. The history of the United States is a story that continues to inspire and guide us today.

Social-Emotional Communication And Structuration

A study by Flament and Apfelbaum (1966) focused upon the significance of the socio-affective value of communication with respect to group structuration. These authors pointed out that there are three crucial aspects to be considered in the process of communication: contact between communicators (overall frequency); socio-affective value of the communicative acts; cognitive meaning of the communicative acts.

The study cited sought to analyze the communication process of 20 groups composed of four members in which each individual communicated solely by written message (Bavelas & Leavitt design). Each member was provided with two hundred written messages, each of which was designated by the experimenter as "+" or "0", indicating the socio-affective value of the content of the message. A predetermined experimental hierarchy of positive messages was established, whereby each member was provided with a specific proportion of positive messages. Thus, member A had 65% positive messages available, member B had 55%, member C had 45%, and D had 35%. During the session, which had an average duration of 17 minutes, each member was free to send messages to any other member. Upon termination of the session, the resultant structure of each group was measured by a sociometric device consisting of three questions centering around efficiency of activity and responsibility.

THE HISTORY OF THE UNITED STATES OF AMERICA

The history of the United States of America is a story of growth and change. It begins with the first settlers, who came to the continent in search of a new life. They found a land of vast resources and a people who were different from them. The settlers and the natives lived together for many years, but there were always tensions between them. The settlers wanted to expand their land, and the natives wanted to protect their way of life. This led to many wars and conflicts. But the settlers were determined to stay, and they fought hard to win. They built a new society, one that was based on the principles of freedom and democracy. This society grew and grew, and it became one of the most powerful in the world. Today, the United States is a country of many different people, but they all share a common history. They all share a common dream of a better life, a life of freedom and opportunity. This is the story of the United States of America, a story of hope and achievement.

The authors stated that with this experimental technique they would be enabled to eliminate the cognitive meaning as a factor, and would need to work only with the contacts and the socio-affective value of these contacts.

The expected hierarchy of $A > B > C > D$ was not strongly evident in the overall frequency of communication. However, in analyzing the socio-affective value of the messages, the researchers found a correlation between the number of positive messages sent and received by each member. The correlation between positive and neutral messages was negative, so that in the case of a member receiving a higher number of + messages from a particular member, he received a lower number of 0 messages from the same member.

In carrying out a dynamic analysis of positive messages during four-minute intervals, the experimenters found that in the first interval the + messages were divided more or less evenly between the members. In the second interval there was more differentiation and selectivity in the sending of + messages, which remained quite stable for the remaining two intervals.

The resultant structure, as outlined by the sociometric device, corresponded to the experimental hierarchy, $A > B > C > D$. Thus, the structuring process appeared to be primarily operating in the positive socio-affective interaction, rather than in the neutral interaction. Flament and Apfelbaum (1966) proposed that this method of communication

The first part of the paper discusses the importance of the research and the objectives of the study. It then proceeds to a literature review, followed by a description of the methodology used. The results of the study are presented in the next section, and the discussion follows. The conclusion is drawn at the end of the paper.

The research was conducted in a laboratory setting, and the data was collected over a period of six months. The participants were all students of the university, and the study was approved by the ethics committee. The results show that there is a significant difference between the two groups, and this difference is statistically significant.

The study has several limitations, and these are discussed in the discussion section. The first limitation is that the sample size was small, and this may have affected the results. The second limitation is that the study was conducted in a laboratory setting, and this may not reflect the results in a real-world setting.

Despite these limitations, the study provides valuable insights into the research area. The results suggest that there is a need for further research in this area, and this is discussed in the conclusion.

analysis, on the socio-affective level, is capable of delineating group structuration. "That sheer contact may be a necessary but not sufficient condition for attraction has been shown by other investigators (Lott & Lott, 1965, p. 261)." This supports a basic contention of Flament and Apfelbaum (1966) that the overall frequency of contact is not the key variable in group structuration. Also supporting this position is Hare (1962, p. 410) in the statement, "....., high interpersonal attractiveness in groups is not always associated with group productivity, an indication that persons are not always chosen on criteria which are related to task ability."

Interaction Within Cognitive And Affective Conditions

It would appear from the foregoing that the formation of attraction and structure is solely a function of the socio-affective aspect of communication. The Flament and Apfelbaum (1966) study did not take into account a cognitive condition whereby there is the possibility of task-oriented acts being valued for their own sake. Flament and Apfelbaum concluded, "Thus, simple mechanisms operating only on the level of socio-affective values of communication, account for the structuration processes that underlie observable phenomena in real-life groups where real communications are exchanged (pp. 386-387)." Marwell (1968) offers an explanation of the potential reward in task-oriented acts:

"A single individual might be able to assume instrumental leadership for a large group because, where awards for each individual are wholly dependent upon the group reaching its goal, any act moving the group toward that goal helps every single member of the group at the same time (p. 230)."

Lott & Lott (1961) cited evidence which supports this contention that the development of positive attitudes toward a person is a function of the receipt of reward in his presence.

The overall purpose or focus of the group is not the sole determinant of what is to be considered as rewarding or punishing to each individual member, but it is a significant factor. As Lott and Lott (1965) have stated, "It is probable, then, that the relationship between interpersonal liking and communication will vary with the conditions under which the communication takes place (p. 292)." Flament and Apfelbaum (1966) designed their experiment in such a way that the focus or emphasis of the group interaction tended to be implicitly social-emotional. "The members of the group were told that after completion of the experiment each of them would be rated according to the messages he had received, the + messages counting for 1 point and the blank messages not counting at all (p. 378)." Thus, the group atmosphere would likely be classified as an affective condition, rather than as a cognitive condition. This could bias the process of structuration in that the

The first part of the paper discusses the importance of the
theoretical framework in the study of the
relationship between the variables. The second part
presents the empirical results of the study. The third part
discusses the implications of the findings for the
theory and practice. The fourth part concludes the paper.

The results of the study show that there is a significant
positive relationship between the variables. This finding
is consistent with the theoretical framework. The
implications of the findings for the theory and practice
are discussed. The study has several limitations and
future research is needed to address these limitations.

The study has several limitations. First, the sample size
is small. Second, the study is cross-sectional. Third,
the study is limited to the specific context. Future
research should address these limitations. The study
concludes that there is a significant positive relationship
between the variables.

social-emotional aspect of the communication is emphasized, rather than the task-oriented aspect.

An affective condition is one in which ego-involvement is generally greater throughout the session; integrative-expressive goals predominate. Mann (1961, p. 676) found the following characteristics to be significant in this condition:

1. Greater need for everyone to be sensitive to other people's feelings.
2. Feel more that they are being judged or criticized as a person.
3. Felt more bored with what was going on.

The cognitive condition is marked by an external problem, an intellectual or task orientation in which adaptive-instrumental goals predominate. Mann found a significant characteristic in that the members felt there existed clearer grounds for deciding who is right or wrong in the cognitive condition. It is also significant that there were five characteristics which did not differentiate between the two conditions, suggesting that although a dichotomy has been created between the cognitive and affective conditions, they are not mutually exclusive. Interaction between persons contains both task-oriented and social-emotional elements, although the primary focus can and does vary according to certain conditions.

In the above study of factors underlying individual performance in the cognitive and affective conditions,

The first part of the paper discusses the importance of the study and the objectives of the research. It then proceeds to a literature review, followed by a description of the methodology used in the study. The results of the study are presented in the next section, followed by a discussion of the findings and their implications. The paper concludes with a summary of the main points and a list of references.

The study was conducted in a laboratory setting, using a sample of 100 participants. The participants were divided into two groups, each of 50 individuals. The first group was assigned to the experimental condition, while the second group was assigned to the control condition. The experimental condition involved a series of tasks that required the participants to perform a specific task, while the control condition involved a series of tasks that did not require the participants to perform the same task. The tasks were performed over a period of 10 minutes, and the results were recorded for each participant.

The results of the study showed that the participants in the experimental condition performed significantly better than the participants in the control condition. This suggests that the task performed by the experimental group was more challenging than the task performed by the control group. The results also showed that the participants in the experimental condition were more motivated than the participants in the control condition. This suggests that the task performed by the experimental group was more motivating than the task performed by the control group.

The findings of the study have several implications. First, they suggest that the task performed by the experimental group was more challenging than the task performed by the control group. This could be used to design more challenging tasks for future studies. Second, the findings suggest that the participants in the experimental group were more motivated than the participants in the control group. This could be used to design more motivating tasks for future studies. Finally, the findings suggest that the task performed by the experimental group was more motivating than the task performed by the control group. This could be used to design more motivating tasks for future studies.

three main characteristics were isolated. The first, Task Prominence, was defined as a fusion of Activity and Task Ability factors proposed by Carter and Bales (Mann, p. 681). It was highly stable across the two conditions. The second factor, Likeability (popularity), was highly related to laughing and joking behavior under the cognitive condition, whereas agreement and avoidance of disagreement were strongly related to this factor under the affective condition. The third factor, Tension, was of low stability, being at a higher level in the affective condition.

Hence, attraction which results from interaction, likely operates in the task interaction as well as the social-emotional interaction. The relative prominence of the task-oriented interaction, as compared to the socio-affective interaction, is contingent upon the particular set of conditions within which the group processes proceeds. This particular set of conditions also determines the prominence of socio-affective interaction in the structuration. Speaking in broad terms, an affective condition favors the development of predominantly social-emotional interaction, whereas a cognitive condition favors the development of predominantly task-oriented interaction.

The Factor Of Task Legitimacy In Structuration

A study by Burke (1967), dealing with task and social-emotional role differentiation, called into question the rather simplified view of Flament and Apfelbaum (1966). The latter authors obtained their results from groups operating within an implicit affective condition, so that the conclusions so derived are limited to this condition. The condition was an affective one due to the fact that it was somewhat competitive and ego-involving. As was stated earlier, groups operating within a cognitive condition may evince certain other dynamics.

Burke (1967) pointed out that in a particular condition it is of paramount importance to be cognizant of the factor of legitimacy of task participation. This refers to the degree of acceptance of a "task ethic", the extent to which the group members are concerned about performing the requirements of task resolution efficiently. He is not denying the relevance of the affective dimension in interaction, since it is known that although group interaction may be task or cognitively centered there naturally arises certain social-emotional demands and problems that must be met (Bales, 1950). At one stage it was thought that, because of the two dimensions, there would automatically develop two specialists, a task leader and a social-emotional leader. The conditions of occurrence of this

task and social-emotional role differentiation were not clearly specified in previous studies.

Burke (1967) was directly concerned with this phenomenon of role differentiation. He concluded that a condition of high task legitimacy results in a minimization of leader role differentiation, so that essentially there is a fusion of the roles of task leader and social-emotional leader. A condition of low task legitimacy results in a maximization of leader role differentiation, leading to the development of a task leader and a separate social-emotional leader.

The dynamics accounting for this role differentiation are to be found in the inequality of task participation, and "...a disliking of the task leader under conditions of low task legitimacy, but not under conditions of high task legitimacy. High task participation on the part of the task leader and competition over the task leader's role is associated with a reduction of the amount of social-emotional participation on the part of the task leader under conditions of low task legitimation, but not under conditions of high task legitimation (Burke, p. 391)." The acceptance of a "task ethic" or the "legitimation of task activity" appears to result in a lessening of interpersonal conflict and hostility. Homans (1961) also was aware of the ambivalent sentiments which members could develop toward leaders, since the latter usually gain their position through rewarding others, but at the same time

they are likely to impose costs on others if only by depriving them of the opportunity to be the leader.

Although the focal point of the above studies is upon leadership formation, the dynamics are equally applicable to the overall structure and its development. That is to say, the aspects of interaction determining leadership underly the formation of the other positions in the structure.

In light of his findings, Burke (1967) restated the Bales-Slater theory of role differentiation (1955):

1. In any group's attempt to reach a goal through independent, coordinated activity, acts designed to achieve the goal (task acts) give rise to tension and hostility if they go beyond the legitimate, expected level (and thus constitute a threat).
2. Subject to the condition given in No. 1 above, when there is an inequality of participation in the task area, the person who is most highly active is the primary source of undesired, non-legitimate change and is consequently the target of some hostility.
3. The person who is illegitimately high in task participation is likely to be preoccupied with task action and, therefore, to engage in little social-emotional activity.
4. Because the task specialist is himself the principal source of tension it is unlikely that he would be effective in resolving this tension, and, if the tension is to be reduced, someone other than the task leader must assume a role aimed at the reduction of interpersonal hostilities and frustrations.
5. The result, therefore, subject to the conditions given in Nos. 1, 2, and 3 above, is the development of task and social-emotional role differentiation (pp. 391-392).

The Costs And Rewards Of Interaction

Implicitly, a reinforcement approach was adopted by Flament and Apfelbaum in their discussion of the dynamics underlying structuration. This reinforcement perspective would apply equally well to an explanation of the role of task-oriented interaction in structuration, particularly in the case of a cognitive condition.

Contacts can be analyzed in terms of rewards and costs, in which rewards are satisfactions and reduced drives, and costs are physical discomfort or mental anxiety which serves to inhibit performance (Thibaut & Kelley, 1959). Thus, interpersonal attraction is based upon the ability to reward, so it is more likely that those who possess similar values would initially be more attractive. Also, high status people are more attractive since they are envisioned as being potentially more rewarding than low status individuals. Secord and Backman (1964) concur with this latter point, and generally agree with the theoretical formulations of Thibaut and Kelley. They sum it up in this manner: "The group structure moves toward an equilibrium in which each person's position in the affect structure is the best that he can obtain in terms of his reward-cost outcomes (p. 19)." Secord and Backman (1964) defined the terms "reward" and "cost":

Any activity on the part of one person that contributes to the gratification of the needs of another can be considered, from the standpoint of the latter, a reward. The costs of engaging in any activity not only include punishment incurred in carrying out that activity, such

as fatigue or anxiety, but also, as Homans argues, include the value of rewards forgone by engaging in this activity rather than alternative activities (p. 21).

Secord and Backman (1964) maintain that an explanation of choice cannot be based upon the characteristics of individual members, because persons may not accurately assess the characteristics of others. Sociometric structure or choice patterns are based upon rewards and costs of the actual interaction, not upon individual characteristics. A relationship in which relatively high costs are incurred by one or both individuals tends to be dissolved. Choices of best-liked persons tend to be mutual. This is true of high-status and low-status individuals and is also congruent with the reward and cost concepts. Secord and Backman (1964) concluded: "Mutuality and the choice of persons who are similar in choice status to the chooser may be thought of as an outcome of the stabilization of relations where each person is obtaining his best available cost-reward outcomes (p. 21)."

Homans (1961) has developed a model highly similar to that of Thibaut and Kelley. The concepts of reward and cost are utilized in analyzing interaction and in explaining choice and cohesiveness. Profit, or net reward, is the key variable in interpersonal attraction. "The more valuable a person's activities are to others, the greater is the esteem in which he is held (Homans, 1961, p. 164)."

Lott and Lott (1965) presented a learning theory perspective in explaining group phenomena, which embraces punishment as well as reward:

There is clear agreement among many contemporary theorists that attraction will follow if one individual either directly provides another with reward or need satisfaction, is perceived as potentially able to do so, or is otherwise associated with such a state of affairs (p. 287). Furthermore, the specific antecedent variables which empirical research has shown to be related to interpersonal attraction can, for the most part, be interpreted in support of this general proposition. The data on propinquity, group climate (including cooperation, democratic leadership, etc.), acceptance, status, personality characteristics, similarity (or complementarity), and success are all predictable from a general reinforcement position (p. 287).

In reviewing Newcomb's (1956, 1958, 1960, 1961) contributions, the previously cited authors concluded, "Communication is recognized as the major interaction process through which individuals can reward one another (p. 284)." It is possible to further state that within this communication between individuals, what is considered as rewarding (or negative) is influenced by the particular condition or atmosphere wherein the interaction transpires. The key to understanding the formation of cohesiveness and structure is the type of interaction, positive and/or negative, which occurs between individuals in the group. Also related to these reward and cost effects in interaction is the phenomenon of single and multiple leadership, which directly reflects the necessity of individuals to be adequately rewarded. Multiple leadership implies that one person is

unable to simultaneously meet the task demands and social-emotional demands of the group, so that these two functions must be satisfied by two separate individuals. In this way costs and rewards are more favorably balanced between members.

CHAPTER III

DEFINITIONS AND HYPOTHESES

Definitions

Of particular importance are the following concepts which were used in a specific manner so as to avoid unnecessary ambiguities.

1. Legitimacy of task activity refers to the degree of acceptability in the group of instrumental, task-oriented behavior. It is the extent to which the group as a whole is willing to undertake the task that is assigned to it, and the degree to which the members will focus upon the task resolution rather than upon personal social-emotional needs. Generally it is the acceptance of a "task ethic": the extent to which they are concerned about performing the task, arriving at conclusions, arriving at a consensus, avoiding distractions which might occur, etc. (Burke, 1967). The legitimation of task activity in the group leads to the creation of an atmosphere in which there is a spirit of cooperation rather than competition. Thus, there is less likely to be resentment in the case where one member is particularly prominent in the interaction. The fact that there tends to be fewer social-emotional strains means that more time and energy is available for the resolution of

the assigned task. In the present investigation the evaluation of an atmosphere of high or low task legitimacy was based upon the criterion of single or multiple leadership, in which single leadership was assumed to be indicative of high task legitimacy and multiple leadership was construed as being characteristic of a state of low task legitimacy. It was expected that a situation of high task legitimacy would be more likely to prevail in groups operating within a cognitive condition (as opposed to an affective condition).

2. Legitimacy of leadership is a concept related to the one previously described. It denotes the degree to which the group members accept a leader. A legitimate leader is one who is essentially a non-emergent leader who is not required to continually direct his energies toward the direct maintenance of his position.
3. Cognitive, or task-oriented interaction, as outlined by Bales (1950), is objective in nature, and oriented toward extra-individual considerations and problems; it is concerned with the intellectual functions and knowledge. There is emotional feeling attached to it, but it is minimal in the sense that if there is a pronounced affective element, the interaction is then considered as primarily social-emotional rather than cognitive or

task oriented. Bales (1950, p. 9) utilized the following broad categories as representing task-oriented behavior: Gives suggestion, Gives opinion, Gives orientation, Asks for orientation, Asks for opinion, and Asks for suggestion.

4. Socio-affective, or social-emotional interaction is operationally defined by Bales (1950). Essentially it involves pronounced emotionally-toned behavior and/or verbalization, the primary characteristic being definite emotional or affective expression. Bales (p. 9) utilizes the following categories to represent this area: Shows solidarity, Shows tension release, Agrees, Disagrees, Shows tension, Shows antagonism.

General Hypotheses

In this investigation the overall guiding hypotheses were stated as follows:

1. The overall frequency of interaction per se, does not adequately account for the development of group structure and the concomitant leadership formation in the two experimental conditions. A more accurate representation is found by examining the frequencies of the various categories of interaction, task and social-emotional, and relating them to the structure and leadership formation.
2. In both the Affective and Cognitive conditions, a key variable in determining the relative prominence of either the task-oriented or socio-affective interaction in the process of structuration and leadership formation, is the factor of legitimacy of task activity.
3. The group structuration and leadership formation evolves slowly over time, so that a comparison of different time phases of interaction yields a dynamic analysis of this development. This makes it feasible to relate the developing structure and leadership to reward-cost concepts, as a means of explaining the emerging interactive patterns between different members.

Specific Hypotheses

The following hypotheses were generated from the assumptions subsumed within the general hypotheses. It was proposed that:

- A. High legitimacy of task activity tends to lead to the emergence of one leader in both experimental conditions. This individual engages in the highest incidence of task-oriented acts, the largest proportion of positive social-emotional acts, and the lowest proportion of negative social-emotional acts (relative to the interaction frequencies of other members). In this situation, the acceptance of a "task ethic" suggests that the structuration is primarily based upon the task interaction. It is a case in which the task structure and social-emotional structure closely approximate each other. Further, it is likely that the structures based upon responsibility and efficiency are congruent with each other, and also congruent with the task structure and the social-emotional structure. Generally, it is expected that the phenomenon of high task legitimacy will be characteristic of most groups operating within the Cognitive Condition.
- B. Low legitimacy of task activity fosters the emergence of two leaders in both experimental conditions.

One individual, the task specialist, engages in the highest proportion of task acts. The second individual, the social-emotional specialist, engages in the highest incidence of positive social-emotional acts, and the lowest incidence of negative social-emotional acts (relative to the interaction frequencies of other group members). In this context of low legitimacy of task activity, the structuration is based upon two separate dimensions of the interaction, task and social-emotional.

Therefore, the task structure and social-emotional structure are expected to differ to a much greater degree than is the case in a situation of high legitimacy of task activity. It is likely that the phenomenon of low task legitimacy will exist more frequently in groups operating within the Affective Condition as contrasted to those groups operating within the Cognitive Condition.

- C. The overall frequency of interaction, contact per se, does not adequately account for the development of group structure and leadership formation, in either of the two experimental conditions.
 - 1. It is the general tendency that in the Cognitive Condition, the frequency of task interaction is most closely related to the resultant leadership and group structure.

2. It is the general tendency that in the Affective Condition, the frequency of social-emotional interaction is most closely related to the resultant leadership and group structure. More specifically, the structure and leadership are a direct function of the positive social-emotional interaction, and inversely related to the negative social-emotional interaction.
- D. A dynamic analysis of each group session reveals the evolvement of the group structure and leadership. The patterns of interaction between members takes shape on the basis of reward and cost effects. A comparison of the progressive time segments of interaction, comprising the entire session, reveals discernible changes in the frequencies of interaction between the individual members. This means that as the session proceeds, each member tends to favor those whose interactions are positive (social-emotional) or neutral (task oriented) in nature. Also, each individual tends to avoid, or react negatively to, those whose interactions are of a negative (social-emotional) nature.

CHAPTER IV

EXPERIMENTAL DESIGN

The Sample

Twenty, four-member groups were formed in order to test the experimental hypotheses. The groups were homogeneous with respect to sex, seven male and thirteen female groups having been formed. The individuals composing these groups were selected from fourth year Educational Psychology courses during the Winter session of 1969. Essentially the selection of the membership for each group was random, with the exception of the stipulation that the prospective members be generally unacquainted with one another. This was designed to preclude the possibility of beginning a group session with an existent, predetermined structure; the goal of selection was to form initially "structureless" groups. This was advisable since previous research had shown that, ".....initial status differences leads to striking differences in the influence pattern which emerges (Moore, 1967, p. 47)." Also, ".....that information regarding the existence of a status differential is as potent a factor in leading to differential influence as is explicit information regarding relevant ability differences (p. 60)." This is known as a status generalization phenomenon.

Experimental Treatments

A. Cognitive Condition (Moon Exercise)

This condition was designed to foster an atmosphere in which group members were disposed toward task-oriented interaction (Appendix A). In operational terms this meant an emphasis upon attending to the solution of the task which was presented to the group, and less emphasis upon social-emotional aspects of interaction. It was pointed out earlier in this paper that the Cognitive Condition was marked by an external problem - an intellectual or cognitive orientation in which adaptive-instrumental goals predominate. There was the intention that there would be relatively fewer socio-affective strains and problems arising in this situation, as opposed to the Affective Condition. This closely corresponds to what Benne and Sheats (1948) term "Group Task Roles", serving to facilitate and coordinate group problem-solving activities.

B. Affective Condition (Grades Exercise)

The purpose of this experimental influence was to create an atmosphere within which the group members accentuated social-emotional interaction (Appendix B). The aim was to generate ego-involvement whereby expressive-integrative goals predominate. The task presented to a group encouraged the members to identify

with the problem and to project their feelings, attitudes, etc. onto it. As a result, the focus of the interaction would be social-emotional, with correspondingly less emphasis upon the task-oriented element. This prominence of the socio-affective area is very similar to stressing "Group Building and Maintenance Roles" (Benne & Sheats, 1948), centering on the fostering of group-centered behavior. The social-emotional problems and strains must first be resolved in order for the successful resolution of the task.

It must be stressed that, although there is a distinction made between the Cognitive and Affective conditions, it is mainly a matter of emphasizing one aspect of the interaction over the other. In both experimental treatments task-oriented behavior is considered as essentially cognitive. The primary difference is that the Cognitive Condition was designed to produce significantly more task-oriented interaction, while the Affective Condition was contrived to foster relatively more social-emotional interaction.

Experimental Procedure

As outlined previously, twenty groups were constituted so that they were virtually unstructured. The twenty groups, comprised of four individuals each, were then randomly split into two sets of ten. One set was arbitrarily designated to take part in the Cognitive Condition, while the second set was exposed to the Affective Condition. Each group in a particular condition was presented with the specified task by means of a printed sheet handed to every member at the beginning of a session (Appendices A & B).

Before the onset of a group meeting, the four individuals were allowed to choose their own seats, the chairs having been previously set up in an approximately circular arrangement. Subsequently the members were introduced to one another by the experimenter. At this time each individual was presented with the task or problem of that experimental condition, and instructed to begin to resolve the problem individually for a period of five minutes. The experimenter then took his seat somewhat outside the group and cautioned the members that he was not to be drawn into any discussion. Reasonable requests for clarification of the task were accepted and an explanation offered.

At the expiration of the five-minute period, the experimenter requested the individuals to begin to approach the task as a group, arriving at a group solution to the presented problem. They were informed that they would be

allotted thirty minutes in which to reach their final conclusions. The members were also told of the experimenter's role of observer, but they were not given the purpose of the observation.

During the thirty minutes of group interaction the observer employed Bales IPA to record the interaction. This was done as covertly as possible, so as not to be a distraction to the group members. Generally, the observer was unnoticed throughout the sessions, the individuals being attentive to the group interaction and the problem.

Upon termination of the session, the Post-Session Questionnaire was presented to each person, with the instructions that they were to be completed individually. Members were also given a number at this time, and requested to use the numbers in the answering of the Questionnaire. This phase of the experiment required approximately five to ten minutes.

Finally, at the end of the experiment the group involved was offered a superficial explanation of the purpose of the session. Care was taken to avoid issuing information which might have threatened to contaminate the sessions of subsequent groups.

Instruments And Measures

- A. Rating of the legitimacy of task activity (Burke, 1967):
this measure was originally based upon the judgement of an observer who evaluates the degree to which the group members appeared to accept a "task ethic". This term was referred to previously in the section on definitions. Briefly, it is considered to represent the acceptability in the group of instrumental, task-oriented behavior, to the extent that the members tend to avoid any distractions and adhere to the goal of successfully completing the task.

Burke (1967) developed the concept and utilized it in a broad sense allowing the observer to form an opinion on rather ill-defined criteria. The present writer decided to relate it to the paradigm of Group Task Roles, Group Building and Maintenance Roles, and Individual Roles (Benne and Sheats, 1948), as a means of deciding upon the primary emphasis of the group. High Task Legitimacy was thus conceptualized as a case in which there is a maximization of Group Task Roles in which, "Their purpose is to facilitate and coordinate group effort in the selection and definition of a common problem and in the solution of that problem (Kemp, 1964, p. 319)." It refers to the essentially task-oriented interaction occurring in both experimental conditions. The Group Building and Maintenance Roles

are mainly social-emotional in focus, and relatively positive. Their purpose is the promotion and maintenance of group-centered attitudes. In contrast are the Individual Roles which are social-emotional, but relatively negative in that the participations are geared toward individual rather than group goals. Therefore the emphasis upon Group Building and Maintenance Roles, and Individual Roles, would be characteristic of Low Task Legitimacy. This would apply equally to the two experimental conditions.

In this investigation no observer was employed to form judgements regarding the legitimacy of task activity of each of the groups in the experiment. Instead the assumption was made that the leadership, single or multiple would be indicative of the degree of task legitimacy. A state of High Task Legitimacy would be characterized by single leadership, while a state of Low Task Legitimacy would be marked by multiple leadership.

There was the expectation that the Cognitive Condition would tend to favor the development of a state of High Task Legitimacy, whereas the Affective Condition would tend to favor the development of a state of Low Task Legitimacy.

B. Post-session questionnaire (Burke, 1967; Flament & Apfelbaum, 1966); as indicated above, this instrument (Appendix C) is a synthesis of two sociometric devices, consisting of eleven items from one (Burke, p. 84) and three questions from the other (Flament & Apfelbaum, p. 378). The first set of items was designed to measure task leadership performance and social-emotional leadership performance by having members rate one another on a ten-point scale for each item. From these ratings it was possible to generate composite scores (factor scores) for each member, indicating the relative position of individual members on the dimensions of task leadership and social-emotional leadership.

The second segment of questions dealt with member task efficiency and the choice of a responsible member. This required an individual member to make a single choice of one other member on the two questions dealing with task efficiency. The remaining question dealing with responsibility, allowed each member to choose one other member or himself.

The total instrument yielded four separate sociometric structures, allowing a comparison between one another, and also a relating of the structures based on the areas of interaction to these sociometric structures, as a means of accounting for the formation of the latter structures.

C. The method of interaction analysis: content analysis is a means of systematically investigating and recording what is said, verbally and/or non-verbally, between persons. Three broad models of content analysis have been formulated: classical, pragmatic, and non-quantitative. In the classical system the emphasis is upon manifest content and quantification. Units are coded to categories descriptive of the content itself, which may be followed by later inferences about the internal state of the communicator (Marsden, 1965). This is a contrast to the pragmatic model of analysis which focuses upon the relationship between the communication symbol and the user; units are coded to categories descriptive of some condition of the communicator. The nonquantitative model is not concerned with the frequency aspect of interaction in gauging intensity, etc. A prime example is that of linguistic analysis, a study of the properties of language as a code for the transmission of communication. The main consideration is the presence or absence of linguistic phenomena.

Bales (1950), and Bales & Strodtbeck (1951), employed an Interaction Process Analysis (Appendix D) that falls within the purview of classical content analysis. The purpose is to interpret and record the social-emotional meaning or task meaning of an act

rather than the actual topical content. Bales envisioned acts as falling into one of three categories: cognitive or symbolic; affective; conative or motivating. He considered it possible to readily observe and record the cognitive and affective aspects of interaction, but the conative aspect was more covert than overt, and would be more difficult with which to deal. Therefore, he chose to concentrate upon the social-emotional area and the task area. The social-emotional area is one in which affect is the primary characteristic (Positive and Negative Reactions). The task area can be conceptualized as a relatively neutral area, and more cognitive in orientation (Attempted Answers and Questions).

A unit of interaction, either verbal or nonverbal, may appear to be simultaneously task-oriented and social-emotional, but its meaning is to be taken as a predominant interpretation the receiver is likely to place upon it. "All categories are described in terms which assume the point of view of the group member toward whom the action is directed (Bales, 1950, p. 39)."

Interaction Process Analysis, IPA, is concerned with interaction or process content as opposed to topical content. As such, it is suited to the purpose of this study, since there is no attempt to judge or gauge the productivity of the small groups in the discussion of their topics. It focuses upon single acts

of communication; a single item of thought or a single item of behavior, the smallest discernible unit of interaction. "In addition to speech centered around the issue being discussed, interaction includes facial expressions, gestures, bodily attitudes, emotional signs, or nonverbal acts of various kinds, either expressive or nonvocal, or more definitely directed toward people (Bales, 1950, p. 38)."

Despite the necessity of the observer forming an inference as to the probable meaning perceived by the target, reliability is quite adequate among trained coders. Further, the Bales system was applied in a less stringent form in the present study, since the primary purpose was to arrive at a final tripartite division of the overall interaction. As a result, the twelve subcategories were not the object of investigation, but rather the three main areas of interaction. The use of the more exact subcategories during the actual interaction analysis, necessarily led to a more accurate investigation than would have otherwise resulted with the use of the three wider categories by themselves. Simply applying the broader categories in the study would likely have proven too ambiguous, and without a definitive basis. However, the data from the twelve subcategories was synthesized to form the data of the three

broader categories, this likely leading to a more valid and reliable type of data for investigation.

The Bales system is applicable to small groups, and although he does not specify the exact limits in terms of numbers, he states,

"A small group is defined as any number of persons engaged in interaction with each other in a single face-to-face meeting or a series of such meetings, in which each member receives some impression or perception of each other member distinct enough so that he can, either at that time or in later questioning, give some reaction to each of the others as an individual person, even though it may be only to recall that the other was present (Bales, 1950, p. 33)."

He appears to be stressing the availability of meaningful contact between all members, and the importance of the depth of the resulting contact.

Bales developed IPA with an emphasis upon the problem-solving paradigm. The problem-solving sequence is conceptualized as involving the problems of: communication, evaluation, control, decision, and tension reduction. The solution of each problem in turn can be regarded as a functional prerequisite to the solution of the next. Bales and Strodtbeck (1951) put forth the view that in a "full-fledged overt problem", the group decision-making proceeds through certain phases (orientation, evaluation, control). They expected detectable differences between the interaction of each particular phase. Although the analysis was not designed to measure group structuration per se, the authors stated, "It is our assumption that

efforts to solve problems of orientation, evaluation, and control (that is, attempts to accomplish the task), tend to lead to a differentiation of the roles of the participants, both as to the function they perform and their gross amounts of participation (Bales & Strodtbeck, 1951, p. 392)." By extrapolating this statement, one can propose that this differentiation is actually synonymous to structuration and is a function of the ongoing interaction.

Bales (1950) proposed that in the problem-solving sequence, there are movements from problem to solution, from tension to tension reduction, and from motivation to motivation reduction. Hence, there is a type of homeostatic balance operating. He implicitly recognizes the significance of social-emotional forces that are operative, and their relevance to group structure, but he does not consider these forces with respect to the specific determinants of structuration but rather as being secondary to the problem-solving sequence. As Bales stated, "When attention is given to the task, strains are created in the social and emotional relations of the group, and attention then turns to the solution of these problems (p. 8)." Here we see the emphasis on the problem-solving context, in which the social-emotional interaction is a dynamic aspect. Bales was aware of the significance of this social-emotional

interaction in the formation of social relationships, apart from the solving of the task.

Thus, Bales (1950) recognized the significance of both the task and social-emotional interaction in relation to group structure, "....., certain selected regularities in the distribution of types of interaction between separate human individuals in a group may be collected to yield generalizations about the social structure of the group (p. 32)." Miller (1951) also recognized that, "The pattern of communication among members of various social groups is an important key to social structure (p. 249)." However, no definite attempt was made by Bales to hypothesize regarding the evolvement of structure or its specific determinants. Bales stresses the problem-solving design, and envisions structure as a product of the interaction growing out of this basic sequence or phases. There is no specific examination of the group interaction as it relates solely to the process of structuration. He conceives the development of structure as centered around the differential participation in the problem-solving sequence.

Bales (1950) is also cognizant of the dynamic change and crystallization of structure through time: "Although the social structure of the group and its culture both arise out of interaction and are formed

by it, once formed, they constitute a part of the framework within which further interaction proceeds (p. 66)." He also hinted at the rewards and costs in the interaction as the relevant factors underlying the formation of structure: "It is to the advantage of every individual in a group to stabilize the potential activity of others toward him, favorably if possible, but in any case in such a way that he can predict it (Bales, p. 65)." The stabilization of relations is important emotionally, and is a generalized phenomenon.

Hence, IPA is not only an appropriate method of examining interaction in these experimental groups, but it is based upon tenets which support the overall theoretical structure of this experiment.

Utilization Of The Experimental Measures

The data yielded by the IPA formed the basis for rating each group as high or low on the dimension of legitimacy of task activity. This was possible since, by definition, high task legitimacy represents a focus upon the solving of the presented task or problem. This activity is represented by task interaction, as defined by Bales IPA. On the other hand, low task legitimacy is marked by a focus upon social-emotional interaction, as well as a focus on the task interaction. These ratings of High Task Legitimacy or Low Task Legitimacy allowed the formulation of hypotheses regarding single or multiple leadership formation. In the case of a group evincing high legitimacy, it was expected that a single leader would emerge, embodying both the role of task specialist and the role of social-emotional specialist. Within the atmosphere of low legitimacy it was expected that there would evolve two separate leaders, a task specialist and a social-emotional specialist.

The leadership, single or multiple, predicted on the basis of the legitimacy of task activity, was then checked against the resultant structures delineated by the Post-Session Questionnaire. This latter instrument was expected to yield a task structure and a social-emotional structure, so that it was possible to relate the predicted leadership formation to these two sociometric data. From the Questionnaire it was possible to designate the respective

specialists or leaders, or the case where one leader embraces both functions. Additionally, there was data pertaining to the efficiency and responsibility of individuals, as judged by fellow members on the Questionnaire. This too was related to the task specialist and social-emotional specialist measures, as well as being compared to the single or multiple leadership formation. These two supplementary criteria of structure provided further validation of the leadership formation predicted from the factor of task legitimacy, as well as being a comparison for the task structure and social-emotional structure.

The next step was to relate the IPA frequencies to the four sociometric structures. In this way there was an inter-member comparison of the frequencies of interaction occurring in the various areas or categories: total frequency of overall interaction, frequency of task acts, frequency of social-emotional acts, frequency of positive social-emotional acts, and frequency of negative social-emotional acts.

The analysis was carried out in the following manner employing a tabular representation of the frequencies of interaction:

		Receivers			
		1	2	3	4
Senders	1	_____			
	2		_____		
	3			_____	
	4				_____

A table, as illustrated above, was constructed for each of the five frequencies of interaction under investigation. Similar tables were constructed for each group, after which they were related to the four sociometric structures. The purpose of this mode of investigation was to reveal the dimension(s) of interaction on which the process of structuration primarily operated. It was hypothesized that the dimension(s) that became most prominent in the structuration was partly a function of the condition within which the group operated, as well as being related to the factor of legitimacy of task activity. The particular table, or tables, which revealed a member hierarchy most closely corresponding to the respective resultant structures, were assumed to show the basis of the structuration. For instance, a table representing task interaction, which had a member hierarchy most closely corresponding to that of the social-emotional structure, would suggest that it was

the task interaction which accounted for the social-emotional structuration.

Also of importance was the comparison of the four socio-metric leaders since they were not based on the same criteria. The task and social-emotional structures were derived from questions that are separate and of demonstrably different purpose (Burke, 1967). The leadership centering on efficiency and responsibility, based on two questions and one question respectively, were expected to be less reliable and of questionable validity since there was no actual evaluation of this aspect in the experiment from which they were drawn (Flament & Apfelbaum, 1966).

A dynamic analysis of the group sessions was carried out, in which each group session of thirty minutes was arbitrarily divided into 5 six-minute intervals. Each segment was analyzed via IPA, which was employed during the entire session. A phase or segment was studied by computing the interaction frequency of an individual on the various dimensions, and comparing these frequencies to those of other members. This involved utilizing an approach that was used in studying the frequency of interaction in the overall session. The following data was gathered for each of the five intervals:

1. Total frequency of contacts.
2. Frequency of cognitive acts.
3. Frequency of social-emotional acts.

4. Frequency of positive social-emotional acts.

5. Frequency of negative social-emotional acts.

The data was then transferred to a tabular form.

		RECEIVERS			
		1	2	3	4
SENDERS	1				
	2				
	3				
	4				

Thus, a total of five tables were constructed for each segment, making the final sum of twenty-five tables representing the entire session of each group. Through a comparative study of the tabular data of the five intervals, it was thought possible to discern the gradual development of trends in the interaction. It was hypothesized that certain interactive patterns would crystallize, as a result of the type of interaction that transpired between the various members. The assumption was made that the phenomenon of coalition formation and structuration would be due to the reward-cost effects, or net reward, of the interaction. In operational terms this meant that in the case of mutual reward and satisfaction, a relationship tends to be an enduring one, whereas if either one or both individuals

incurred continual costs (punishment; negative interaction) the relationship would likely be an ephemeral one. Thus, mutual reward tends to generate further reciprocation of positive interaction, but in a case where one member withholds a reward or acts negatively, the other member(s) will tend to withhold reward (positive interaction) and/or react negatively.

CHAPTER V

ANALYSIS AND INTERPRETATION OF THE DATA

The Criteria Of Structure And Leadership

A factor analysis was carried out on the data of the first 11 items in the Post-Session Questionnaire. This was followed by the computation of factor scores ($\bar{x} = 50$, S.D. = 10) for each group member, allowing the arrangement of these members into a group hierarchy or structure. In Table 1, dealing with groups operating within the Affective Condition, the analysis revealed one significant factor although there was a tenuous suggestion of another factor, which was non-significant. The factor analysis of the data of groups interacting within the Cognitive Condition (Table 2) yielded two factors, one a very significant factor and the other a factor of lesser significance. The identification of these two factors in the Cognitive Condition is congruent to Burke's (1967) findings under similar circumstances. In the case of the Affective condition it was not possible to ascribe psychological meaning to the single factor, since all 11 of the variables loaded highly (significantly positive) on this dimension. Hence the theoretical distinctions that were assumed to be inherent in the questions (Burke, 1967) were not operative when individuals in the Affective Condition considered to them.

TABLE 1

FACTOR ANALYTIC RESULTS OF THE POST-SESSION
QUESTIONNAIRE: AFFECTIVE CONDITION

<u>QUESTION</u>	<u>FACTOR LOADING</u>
1	0.929
2	0.893
3	0.882
4	0.901
5	0.881
6	0.901
7	0.876
8	0.820
9	0.915
10	0.698
11	0.947

TABLE 2

FACTOR ANALYTIC RESULTS OF THE POST-SESSION

QUESTIONNAIRE: COGNITIVE CONDITION

<u>QUESTION</u>	<u>FACTOR LOADINGS</u>	
	<u>I</u> (TASK)	<u>II</u> (SOCIAL-EMOTIONAL)
1	0.910	0.238
2	0.680	0.611
3	0.576	-0.035
4	0.126	0.873
5	0.900	0.017
6	0.837	0.244
7	0.818	0.351
8	0.262	0.867
9	0.866	0.226
10	0.046	0.952
11	0.862	0.237

In the case of the two factors isolated in the Cognitive Condition it was a straightforward matter to determine the psychological meaning. Factor 1 had an almost exclusively high loading on the task dimension, while Factor 2 had an almost exclusively high loading on the social-emotional dimension.

It is significant that one dimension of leadership or attraction emerged in the Affective Condition, whereas two dimensions (task and social-emotional) emerged in the Cognitive Condition. It is reasonable to assume that the task presented in the Affective Condition produced the ego-involvement for which it was designed, but that it also engendered an involvement in members that made the task more meaningful. The logical conclusion was that the Affective task was of such a nature that the members adopted a wholistic approach to the interaction, and that they did not approach the questionnaire in terms of two separate dimensions, task and social-emotional. The two factors found in the Cognitive Condition suggest that individuals within that group atmosphere were much more inclined to think in terms of the separate task and social-emotional dimensions. The explanation for this may be that persons in the Cognitive Condition were less meaningfully involved with the task so that they were more inclined to remain emotionally aloof from the task resolution.

The single factor of the Affective Condition means that this was, for the most part, a state of high task legitimacy in which the task structure and social-emotional structures are congruent. Hypothesis A proposed that this would be the case in the Cognitive Condition, but in fact this was not so. The two separate factors of the Cognitive Condition signify that here there was a general tendency toward a state of low task legitimacy in which the task and social-emotional structures differ to an appreciable degree. Hypothesis B was incorrect in assuming that this would tend to occur more frequently in the Affective Condition.

A comparison of the sociometric data regarding leadership was utilized as a means of determining single or multiple leadership, and also as a method whereby an internal check could be made between the different criteria pertaining to attraction or leadership. Thus, the data involved was drawn from the factor analysis of the first 11 questionnaire items, as well as from three additional items concerned with efficiency and responsibility. Table 3 presents the three dimensions of leadership in the Affective Condition and it can be seen that within six groups there was definite close correspondence between the three indices of leadership. This was expected since the individuals involved in this condition did not differentiate between the task and social-emotional criteria in their choices. The consistency in their choices should logically extend to the three additional

items, which were assumed to be relatively task oriented. In groups D, H, I and O there was not as high a degree of consistency between the three indices of leadership, but in no case was there a complete lack of agreement. Therefore it was concluded that the groups within the Affective Condition demonstrated a definite consistency throughout their responses to the items of the Post-Session Questionnaire.

It is also evident that on the basis of the single factor there was only a single instance of multiple leadership, this being the case of Group F. Thus the Affective Condition definitely tends to foster a state of high task legitimacy in which there is a single individual embracing the function of task leadership and social-emotional leadership in each group.

TABLE 3

THE BASES OF SOCIOMETRIC LEADERSHIP:

AFFECTIVE CONDITION

<u>GROUP</u>	<u>FACTOR I</u>	<u>EFFICIENCY</u>	<u>RESPONSIBILITY</u>
A	2*	2*	2*
B	2	2	2
D	1	1	3
F	4 = 2**	4 = 2	4
H	1	1	2
I	2	1	2
L	4	4	4
M	2	1 = 2	1 = 2
O	2	2	3
Q	1	1	1

*The numbers designate the individual(s) who emerged as leader of the group, according to the particular criterion upon which the leadership was based.

**Equality between two numbers indicates that these two individuals were approximately equal in the leadership choice.

Table 4 compares the sociometric leadership within the Cognitive Condition, which was broken down into four areas on the basis of the factor analysis and the three questionnaire items dealing with efficiency and responsibility. There are four theoretical bases of leadership in each group, and the results illustrate that there is not the congruence between them that was evident in the Affective Condition. In comparing the leadership based on the two factors it is evident that the general tendency is the emergence of multiple leadership, which in fact did occur in seven of the groups. Three groups, J, K, and N showed single leadership. A comparison between the factor analytic criteria of leadership and the criteria employing questions of efficiency and responsibility, suggested that overall there was considerable inconsistency between them. A high degree of consistency was seen only in groups G, J, K and N, although some of the other groups (P and R) were fairly consistent. There was a tenuous indication that the criteria of efficiency and responsibility were more closely allied to the Task Factor than the Social-Emotional Factor.

The results of Table 4 fostered the conclusion that the individuals were basing their choices upon more than one criteria, task and social-emotional. Thus the Cognitive Condition tends to give rise to a state of low task legitimacy in which two leaders emerge in each group, one a task leader and the other a social-emotional leader.

The phenomenon was expected to occur more often in the Affective Condition because of the expectation of greater emotionality in the interaction. In reality the people became more involved in the Affective task, as expected, but the emotion appeared to have been channelled into constructive action, so that people were wholistically involved and did not make an artificial separation (task, social-emotional) when forming preferences for one another.

TABLE 4

THE BASES OF SOCIOMETRIC LEADERSHIP:

COGNITIVE CONDITION

GROUP	FACTOR I (TASK)	FACTOR II (SOCIAL-EMOTIONAL)	EFFICIENCY	RESPONSIBILITY
C	1*	2*	3*	1*
E	1	4 = 3**	1	1 = 4
G	3	2 = 3	3	3
J	1	1	1	1
K	1	1	1	1
N	2	2	2	2
P	3	3 = 1	3	1
R	1	4	1	1
S	3	1	2	3
T	4	1	2 = 4	2 = 4

*The numbers designate the individual(s) who emerged as leader of the group, according to the particular criterion upon which the leadership was based.

**Equality between two numbers indicates that these two individuals were approximately equal in the leadership choice.

Determination Of The Efficacy Of The Experimental Treatments

It was assumed that the Affective Condition would create a group atmosphere in which social-emotional interaction would be more prominent as compared to that occurring in the Cognitive Condition. Since both experimental treatments consisted of presenting a specific task to a group, there was the expectation that the task interaction, as compared to the social-emotional, would constitute a larger percentage of the total interaction. Tables 5 and 6 show that, in fact, the task interaction is more prominent in all but two of the groups, which were involved in the Affective Condition.

In terms of mean percentages in the various categories of interaction, it is apparent that the differences are small between the two treatments, (Tables 5 and 6). However, the expectation of there being more social-emotional interaction in the Affective Condition was born out, even though intuitively it was assumed that these trends would be more marked. The data seemed to indicate that the effectiveness of the two treatments was limited and below expectations; however, the factor analysis of the Post-Session Questionnaire indicated that there were in fact significant differences in the manner in which the structuration took place in the two treatments. It was concluded that the interaction occurring within the two conditions was essentially similar in terms of IPA, but the context was a key factor in terms

TABLE 5

GROUP FREQUENCIES IN THE FOUR AREAS OF INTERACTION:
AFFECTIVE CONDITION

<u>GROUP</u>	<u>TASK</u>	<u>SOCIAL-EMOTIONAL</u>	<u>POSITIVE</u>	<u>NEGATIVE</u>
A	102*	87	37	50
B	93	133	8	45
D	157	209	118	91
F	208	121	82	39
H	233	113	86	27
I	217	81	68	13
L	262	214	196	18
M	228	102	89	13
O	165	128	106	22
Q	281	116	110	6
\bar{X}	194.6	130.4	---	32.4
%	60.0	40.0	30.0	10.0

*This number represents the total units of task interaction (Bales IPA) occurring within GROUP A during the thirty-minute session.

TABLE 6

GROUP FREQUENCIES IN THE FOUR AREAS OF INTERACTION:
COGNITIVE CONDITION

<u>GROUP</u>	<u>TASK</u>	<u>SOCIAL-EMOTIONAL</u>	<u>POSITIVE</u>	<u>NEGATIVE</u>
C	148*	136	106	30
E	199	143	103	40
G	208	133	117	16
J	197	144	122	22
K	256	105	86	19
N	213	110	90	20
P	281	140	124	16
R	288	94	70	24
S	280	184	133	51
T	361	120	100	20
\bar{X}	243.1	130.9	---	25.8
%	65.0	35.0	28.0	7.0

*This number represents the total units of task interaction (Bales IPA) occurring within GROUP C during the thirty-minute session.

of the actual structuration. As Mann (1961) has proven, individual performance in small groups is a function not only of the actual interaction but also of the condition under which the group is operating. An example is the finding that, "Laughing and joking behavior is highly related to Likeability only under the Task condition, whereas agreement and avoidance of disagreement are strongly related to Likeability only under the Social-Emotional condition (p. 680)." Basing one's inferences solely upon the observable interaction can be somewhat misleading because one cannot fully take into account the influence that the condition is exerting upon the individual's interpretation. The condition certainly has a profound influence on the meaning that a receiver will ascribe to a unit of interaction.

The Area(s) Of Interaction Underlying Structuration

In order to identify the area of interaction underlying structuration in each group, the interactional structures were compared to the sociometric structure(s). The five interactional structures were formulated from the frequency of sending of each member in the five areas of interaction: task, social-emotional, positive, negative, and total. The sociometric structure(s) was the result of the factor analysis of the Post-Session Questionnaire. In this way the most closely corresponding interactional structure was assumed to reflect the area of interaction which had primarily entered into the formation of the sociometric structure(s).

Table 7 deals with the Affective Condition, and portrays the sociometric structure and interactional structure of each group, the members (expressed as numbers) being arranged from high to low. In five groups (A,B,D,M,O) the structuration was primarily based upon the positive social-emotional interaction, while in the remaining five groups (F,H,I,L,Q) the structuration was primarily a function of the task interaction. Therefore the positive interaction and the task interaction are equally prominent in the development of structure. Partial support is lent to Hypothesis C2 in which it was posited that the structuration is a direct function of the positive social-emotional interaction. In reality the task interaction just as

TABLE 7

THE GROUP INTERACTIONAL STRUCTURE CORRESPONDING TO
THE SOCIOMETRIC STRUCTURE: AFFECTIVE CONDITION

GROUP	SOCIOMETRIC STRUCTURE*	CORRESPONDING INTERACTIONAL STRUCTURE*
A	2 4 = 3 1	Positive social-emotional: 2 4 3 1
B	2 3 1 4	Positive social-emotional: 2 3 1 4
D	1 3 4 = 2	Positive social-emotional: 1 2 = 3 4
F	4 = 2 1 3	Task (all structures were similar): 4 = 2 1 3
H	1 4 = 2 3	Task: 1 4 3 = 2
I	2 1 4 3	Task: 1 = 2 4 3
L	4 1 2 3	Task: 4 1 = 2 3

TABLE 7 continued:

GROUP	SOCIOMETRIC STRUCTURE*	CORRESPONDING INTERACTIONAL STRUCTURE*
M	2 3 4 1	Positive social-emotional: 2 4 3 1
O	2 3 1 4	Positive social-emotional: 3 = 2 1 4
Q	1 3 4 = 2	Task & Total: 1 (Positive social-emotional 3 was very similar) 4 2

*In both the sociometric and interactional structures, the four group members are arranged in a hierarchical structure beginning with the most chosen and descending to the least chosen.

frequently underlies the group structuration in this experimental condition. The factor analysis itself suggested that this would be the case, because a single factor emerged combining both the task and social-emotional criteria of leadership.

In the case of the Cognitive Condition, Table 8 is based on the two sociometric structures, task and social-emotional, which were derived from the factor analysis. Thus it was necessary to find the interactional structure that corresponded to each sociometric structure. In some instances the same interactional structure corresponded to both. One general finding was that the task interaction clearly tended to underly the formation of the task structure (in support of Hypothesis C1). However, there was an exception in which the positive social-emotional interaction formed the basis for the task structure (Group R), and another two cases where the social-emotional interaction was equally as prominent as the task interaction in the structuration (Groups G & K). Two instances were also identified in which the total interaction was the key to the task structuration (Groups E & S); however, the task interaction forms the largest segment of the total interaction.

Another general finding of Table 8 was that the social-emotional interaction, positive and negative, tended to underly the formation of the social-emotional structure (in support of Hypothesis C2). The finding was not as definite

TABLE 8

THE GROUP INTERACTIONAL STRUCTURE CORRESPONDING TO
THE SOCIOMETRIC STRUCTURE: COGNITIVE CONDITION

GROUP	SOCIOMETRIC STRUCTURE*	CORRESPONDING INTERACTIONAL STRUCTURE*
C	Task: 1 3 2 4	Task & Total: 1 = 3 2 4
	Social- 2 emotional: 4 3 = 1	Negative: 3 (all structures had a 1 negative relation) 2 4
E	Task: 1 3 2 = 4	Total: 1 3 = 4 2
	Social- 4 = 3 emotional: 1 2	Positive social-emotional: 2=3=4 1
G	Task: 3 4 2 1	Task & Positive 3 social-emotional: 2 = 4 1
	Social- 2 = 3 emotional: 4 1	Task & Positive 3 social-emotional: 2 = 4 1

TABLE 8 continued:

GROUP	SOCIOMETRIC STRUCTURE*		CORRESPONDING INTERACTIONAL STRUCTURE*	
J	Task:	1 3 4 2	Task:	1 = 3 4 2
	Social- emotional:	1 3 2 4	Task:	1 = 3 4 2
K	Task:	1 3 4 2	Task & Negative social-emotional:	1 4 3 = 2
	Social- emotional:	1 3 4 2	Task & Negative social-emotional:	1 4 3 = 2
N	Task:	2 3 1 4	Task & Total:	2 3 1 4
	Social- emotional:	2 4 1 3	Positive social-emotional:	2 4 3 1
P	Task:	3 2 = 1 4	Task:	3 1 = 2 4
	Social- emotional:	3 = 1 2 = 4	Positive social-emotional:	3 = 1 2 4

TABLE 8 continued:

GROUP	SOCIOMETRIC STRUCTURE*	CORRESPONDING INTERACTIONAL STRUCTURE*
R	Task: 1 2 3 = 4	Positive social-emotional: 1 2 = 3 4
	Social-emotional: 4 3 1 2	Negative social-emotional: 1 = 2 (assuming an inverse relationship) 4 3
S	Task: 3 2 1 4	Total (Task was similar): 3 2 1 4
	Social-emotional: 1 4 2 3	Positive social-emotional: 1 3 2 4
T	Task: 4 2 3 1	Task & Total: 4 2 3 1
	Social-emotional: 1 4 = 2 3	Positive social-emotional: 4 1 = 2 3

*In both the sociometric and interactional structures, the four group members are arranged in a hierarchical structure beginning with the most chosen and descending to the least chosen.

a trend as in the case of the formation of the task structure. There were particular instances (Groups G,J,K) where the task interaction was equally or more predominantly involved in the social-emotional structuration.

Although Hypotheses C1 and C2 were generally supported, there are notable exceptions which suggest that the formation of attraction is a very complex and subtle phenomenon, and is often based on more than one area of interaction. It is quite clear that in the majority of cases the negative interaction had an inverse relation to the sociometric structure but in one case had a direct relationship; however, in this latter case the task interaction was equally influential (if not more so) in the formation of the structure. So it appears that it is definitely possible for a particular person to be a prominent sender in the negative interaction and offset this by being equally prominent in the task interaction and/or positive interaction.

The comparison of the sociometric and interactional structures confirms the expectations based upon the results of the factor analysis: the two factors suggested that individuals in the Cognitive Condition created a task and social-emotional dichotomy in forming their choices in the questionnaire. The general trend as indicated by the data in Table 8, confirmed the contention since the task interaction tended to underly the task structuration, and the social-emotional interaction tended to form the basis of the social-emotional structuration.

Dynamic Analysis Based Upon Reward-Cost Effects

Definite trends were discernible in the ongoing interaction of the group sessions (Appendix E). Those members emerging as leaders on the criteria of the questionnaire, were primarily the most active in the interaction. They were also the individuals usually most involved in the channels of mutual interaction, as opposed to the channels of unidirectional contact (in support of Hypothesis D). It is significant that these persons were also often prominent initiators of negative social-emotional interaction (contrary to Hypothesis D), which was assumed to have a damaging effect to a relationship. Often the negative interaction became more frequent between two highly active members, this perhaps being a reflection of their struggle for ascendancy, or perhaps an expression of the degree of openness of the communication. Their activity in the other areas of interaction apparently often offset the detrimental effects of the negative interaction. Overall the negative interaction constituted a relatively small proportion of the total interaction, so that it likely exerted a minimal influence on the attraction and structuration. The data in the previous section support this latter contention.

Channels of unidirectional contact were comparatively transitory while channels of mutual interaction (and non-negative) tended to persist, if not strengthen, as the sessions proceeded. Mutual channels of negative interaction

did occur but they were not as prominent or permanent as the positive mutual channels. The relationships that formed during the interaction primarily showed that the most attractive persons (based upon the questionnaire), who were usually the most active in the interaction, were mainly attracted to each other. These findings suggest that attraction and repulsion are a function of the experiences individuals have within the ongoing interaction. More specifically this experience is based upon cost-reward values of the interaction, as predicted in Hypothesis D.

CHAPTER VI

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

Summary And Conclusions

A presentation of the findings relevant to each hypothesis will be made, in order to effectively gauge the degree of predictive validity of the hypotheses.

Hypothesis A: The identification of a single factor in the Affective Condition suggested that the tendency was for a state of high task legitimacy to exist, in which the task structure and social-emotional structure are congruent. Although this congruence was supportive of the concept of significant involvement in a state of high task legitimacy, it was expected to primarily occur in the Cognitive Condition. The comparison of the sociometric data regarding leadership (Table 3) did in fact show that there was a definite trend toward single leadership, whereby one individual encompassed the roles of task leader and social-emotional leader. Leadership based on the criteria of efficiency and responsibility was generally in agreement with that of the factor analysis. Further, the factor analysis indicated that the structuration was primarily a function of the task-oriented interaction (supportive of the hypothesis).

Tables 7 and 8, as well as the dynamic analysis, provided clear support for the contention that the single

emergent leader would be the individual who tended to engage in the highest incidence of task-oriented acts and the largest proportion of positive social-emotional acts. However, it was also shown that this leader was often not the least active in the area of negative social-emotional interaction. This latter finding was not in agreement with the hypothesis but can likely be explained by the fact that the negative interaction constituted a very small proportion of the total, and its effects were probably offset by the other areas of interaction.

Hypothesis B: In the Cognitive Condition two factors were identified suggesting that there were two separate bases for the structuration, and that there would be the tendency for the task structure and social-emotional structure to differ (Table 2). This characterizes a state of low task legitimacy in which there tends to emerge two separate leaders, one a task leader and the other a social-emotional leader. The prediction of the hypothesis was that the state of low task legitimacy would be characteristic of the Affective Condition, whereas in actuality it was characteristic of the Cognitive Condition. Less involvement, as compared to that in the affective task, seems to have accounted for this finding of low task legitimacy. The data of Table 4 revealed the sociometric leadership of the Cognitive Condition to be significantly more multiple than single, supporting the expectations based on the factor analysis. There was

obviously less congruence amongst these four criteria of leadership than that of the Affective Condition (Table 2).

Tables 7 and 8, plus the dynamic analysis, indicated that the task leader clearly tended to be the individual most prominent in the task-oriented interaction (in support of Hypothesis B). The social-emotional leader tended to be the individual who engages in the highest incidence of positive interaction (in support of Hypothesis C). There was not consistent evidence supporting the prediction that the social-emotional leader would tend to have the lowest incidence of negative interaction. In certain cases the reverse was true, but as previously stated it appeared that the other areas of interaction were more significant in the structuration.

Hypotheses C1 and C2: The results of Table 8 (Cognitive Condition) led to the conclusion that the task interaction tended to underly the formation of the task structure, in accordance with Hypothesis C1. It was also found that the social-emotional interaction primarily provided the basis for the social-emotional structuration, which was predicted by Hypothesis C2 (but as being characteristic of the Affective Condition). In Table 7 (Affective Condition) the results suggested that the positive interaction and the task interaction are equally prominent in the structuration and leadership, this providing partial vindication of Hypothesis C2. It was predicted that the positive interaction

would be primarily responsible for the structuration. Additionally it was expected that the structure and leadership would be inversely related to the negative social-emotional interaction, which in fact did not emerge as a definite trend.

Hypothesis D: The results of the dynamic analysis provided support for the hypothesis by showing that the patterns of interaction between members takes shape on the basis of reward and cost effects. Those individuals who emerged as leaders definitely tended to be the most active in the interaction, particularly in the channels of mutual interaction. The most attractive persons were the most active in the task and positive interaction, and at times were relatively prominent in the area of negative interaction (the latter finding not supporting the hypothesis). Since the negative social-emotional interaction was such a small percentage of the total interaction, its effects were assumed to be less significant than those of the other areas of interaction. Therefore the damaging effects of the negative interaction could be overshadowed by the task and positive interaction.

The members were attracted to one another on the basis of mutual reward: mutual task interaction and mutual positive interaction. Channels of unidirectional contact tended to be non-rewarding for one member and tended to be less frequent, and to decrease in activity over time.

Mutual channels of negative interaction also tended to be more transitory and less frequent, since they were also non-rewarding (higher costs).

Implications

The four main purposes of the study, as outlined in Chapter I, were generally met but there is certainly room for further improvement. The hypotheses were quite broad in scope, and as expected were not totally supported nor refuted. Certainly more refined research is possible, both in using similar procedures and different procedures.

Improvements can be made in the application of the Bales IPA by training coders in its use and thereby arriving at greater reliability and validity. The author applied the system in a less stringent and less exact manner since the investigation was designed to measure overall trends, rather than specifics. It would also be of value to experiment with affective and cognitive tasks that were more disparate. The Post-Session Questionnaire is also open to changes, which would lead to further interesting results. Perhaps one of the more important changes would be that of devising the study in such a manner so as to be more conducive to statistical analysis, although the qualitative type of evaluation is certainly applicable to this type of data.

Despite some of the shortcomings discussed above, the study did yield some conclusions that are applicable to

small groups operating in diversified settings. Persons such as teachers, who are in the position of working with groups daily, should be aware of the dynamics of structuration and leadership formation. It is of importance to be cognizant of the effects that a particular task will have upon a group: the members may or may not accept the task fully (the factor of legitimation of task activity). One must also take into account that the ongoing interaction of the group members is the means by which the structure forms, and that it is the experiences in terms of rewards and costs that determine such things as attractiveness, leadership, channels of communication, etc.

Perhaps one of the most common failings of individuals leading groups and of the members themselves, is that they tend not to be aware of the fact that they respond differently to the various types of interaction (task and social-emotional).

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APPENDICES

APPENDIX A

TASK FOR THE COGNITIVE CONDITION:

LOST-ON-THE-MOON EXERCISE

NUMBER _____

GROUP _____

LOST-ON-THE-MOON EXERCISE

(adapted from Jay Hall)

INSTRUCTIONS:

A space crew was originally scheduled to rendezvous with a mother ship on the lighted surface of the moon. Due to mechanical difficulties, however, the ship was forced to land at a spot some 200 miles from the rendezvous point. During re-entry and landing, much of the equipment aboard was damaged and, since survival depends upon reaching the mother ship, the most critical items available must be chosen for the 200-mile trip. Below are listed the 15 items left intact and undamaged after landing. The task of the group is to rank order them in terms of importance in allowing the crew to reach the rendezvous point. Discuss your individual choices and arrive at a final list as a group. Place the number 1 beside the most important item, the number 2 beside the second most important, and so on through number 15, the least important.

You have a total of 30 minutes within which to complete the task. If your group finishes the task before the time limit has elapsed, continue to examine the reasons for your choice. The proceedings of the session and the conclusions, are strictly confidential.

- _____ Box of matches
- _____ Food concentrate
- _____ 50 feet of nylon rope
- _____ Parachute silk
- _____ Portable heating unit
- _____ Two .45 calibre pistols
- _____ One case dehydrated pet milk
- _____ Two 100-lb. tanks of oxygen
- _____ Stellar map (of the moon's constellation)

APPENDIX A continued:

_____ Life raft
_____ Magnetic compass
_____ 5 gallons of water
_____ Signal flares
_____ First aid kit containing injection needles
_____ Solar-powered FM receiver-transmitter

APPENDIX B

TASK FOR THE AFFECTIVE CONDITION:

GRADING-METHODS EXERCISE

NUMBER _____

GROUP _____

GRADING METHODS

INSTRUCTIONS:

The topic of grades, or marks, is a controversial one, particularly at the university level. Listed below are some of the grading systems currently employed by your professors. Discuss the merits and demerits of each grading method, with a view to forming a group decision on the rank that should be assigned to the individual methods. A rank of 1 would represent the most desirable, while a rank of 13 would represent the least desirable. Finally, discuss whether or not grades have a place in a university setting.

You have a maximum time limit of 30 minutes within which to complete the task. If your group finishes the task before the time limit has elapsed, continue to discuss the general topic of grades. The proceedings of the session and the conclusions, are strictly confidential.

As a student, your grade should depend upon:

- _____ Your performance on written examinations, evaluated by your professor.
- _____ Your contribution to seminar discussions, evaluated by your professor.
- _____ Your contribution to seminar discussions, evaluated by your peers.
- _____ Your demonstration, in discussions, of having read assigned materials, evaluated by your professor.
- _____ Your performance in written examinations and seminar discussions, evaluated by your professor.
- _____ Your performance in written examinations and class participation, evaluated by your professor.
- _____ Your abilities in oral examinations, evaluated by your professor.

APPENDIX B continued:

- _____ Your abilities in oral examinations,
evaluated by your peers.
- _____ Your performance in written examinations,
and responsible attendance, evaluated by
your professor.
- _____ Your knowledge of specific, course-related
materials, evaluated by your professor.
- _____ Your ability to apply course-related
knowledge, evaluated by your professor.
- _____ Other (one other grading method not covered
in the above list).

APPENDIX C

POST-SESSION QUESTIONNAIRE

INSTRUCTIONS:

Beneath each of the eleven statements listed below, is a ten-point scale. Number 1 is the lowest rank and number 10 is the highest rank. Your task is to rank the four members of the group, including yourself, by placing each member's number on one of the dots on the scale. Thus, for each of the eleven items four numbers should appear on the scale.

1. Providing "fuel" for discussion by introducing ideas and opinions for the rest of the group to discuss.

1 . . . 5 10

2. Doing most to guide the discussion and keep it moving effectively.

1 . . . 5 10

3. Joking and kidding, finding the potentially humorous implications in this discussion.

1 . . . 5 10

4. Doing most to keep relationships between members cordial and friendly.

1 . . . 5 10

5. Making most attempts to influence the group's opinion.

1 . . . 5 10

6. Being the most successful in influencing the group's opinion.

1 . . . 5 10

APPENDIX C continued:

7. Providing clarification, getting the discussion to the point by getting terms defined and pointing out logical difficulties.

1 . . . 5 10

8. Most liked.

1 . . . 5 10

9. Standing out as the leader in the discussion.

1 . . . 5 10

10. Making tactful comments to heal any hurt feelings which might arise in the discussion.

1 . . . 5 10

11. Providing the best ideas for the discussion.

1 . . . 5 10

Answer the following questions by placing the number of the member chosen in the blank at the end of the item. Thus, for each of these questions there should appear one number in the blank.

12. In your opinion, which one of your three fellow members was the most efficient in the activity of the group?

13. Which one was the least efficient? _____

14. If the four of you made up a team, which one of you should be the responsible member? _____

APPENDIX D

BALES IPA PROTOCOL SHEET

BALES INTERACTION PROCESS ANALYSIS

I.	Shows Solidarity - raises other's status - helps - rewards
II.	Shows Tension Release - shows satisfaction - laughs
III.	Agrees - passive acceptance - complies - understands
IV.	Gives Suggestion - implies autonomy
V.	Gives opinion - evaluates - analysis - feeling - wish
VI.	Gives Orientation - information - repeats - clarifies - confirms
VII.	Asks for Orientation - information - repetition - confirmation

VIII.	Asks for Opinion	- evaluation - analysis - expression of feeling
IX.	Asks for Suggestion	- direction - ways of action
X.	Disagrees	- passive rejection - formality - withholds help
XI.	Shows Tension	- asks for help - withdraws "Out of Field"
XII.	Shows Antagonism	- deflates other - defends self - asserts self

APPENDIX E

AN EXAMPLE OF DYNAMIC ANALYSIS OF GROUP INTERACTION

SUMMARY OF THE INTERACTION OF GROUP C (COGNITIVE CONDITION)

Task Interaction

Prominent sender: members 1 and 3
Prominent receiver: members 1 and 3
Channels of mutual interaction:
 1 - 3 (active throughout the session)
 1 - 2 (sporadic)
Channels of unidirectional contact:
 3 to 4 (in the middle segments only)

Positive Social-Emotional Interaction

Prominent sender: members 1 and 3
Prominent receiver: members 1 and 3
Channels of mutual interaction:
 1 - 3 (active throughout the session)
 1 - 4 (weak, emerged in latter stages)
Channels of unidirectional contact:
 2 to 3 (weakened as session progressed)

Negative Social-Emotional Interaction

Prominent sender: member 3
Prominent receiver: member 1
Channels of mutual interaction: none
Channels of unidirectional contact:
 3 to 1
 3 to 2 (emerged in latter segments)
 3 to 4 (emerged in latter segments)

Social-Emotional Interaction

Prominent sender: member 3
Prominent receiver: member 1
Channels of mutual interaction:
 1 - 3 (active throughout the session)
 1 - 2 (gradually weakened)
Channels of unidirectional contact:
 3 to 4 (sporadic)
 3 to 2 (consistent but weak)

APPENDIX E continued:

Total Interaction

Prominent sender: members 1 and 3

Prominent receiver: members 1 and 3

Channels of mutual interaction:

1 - 3 (active throughout the session)

1 - 2 (weakened in latter segments)

2 - 3 (weak, emerged in middle stages)

1 - 4 (emerged in latter segments)

Channels of unidirectional contact:

3 to 4

Conclusions

Member 1 certainly appeared to be most involved in the channels of mutual interaction, excluding the area of negative interaction. Thus it was expected that he would be an attractive individual, particularly in the task area. In fact he did emerge as task leader in the results of the Post-Session Questionnaire. The results of the questionnaire also indicated that the social-emotional structure had an inverse relationship to the task structure, suggesting that it was the negative interaction which exerted the determining influence in the social-emotional structuration. Thus, member 4 emerged as the leader, this result being congruent with the fact that member 4 was least active in the negative interaction.

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